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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,376	06/06/2001	Robert A.H. Brunet	13202.00302	2720
27160	7590	02/19/2004	EXAMINER	
PATENT ADMINSTRATOR KATTEN MUCHIN ZAVIS ROSENMAN 525 WEST MONROE STREET SUITE 1600 CHICAGO, IL 60661-3693			SORKIN, DAVID L	
			ART UNIT	PAPER NUMBER
			1723	
DATE MAILED: 02/19/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,376

Applicant(s)

BRUNET ET AL.

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 5-7,9,10,12,13,15,17,21,27-29,31 and 38-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,8,11,14,16,18-20,22-26,30,32-37 and 41-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. This application contains claims 5-7, 9, 10, 12, 13, 15, 17, 21, 27-29, 31 and 38-40 drawn to an invention nonelected with traverse in the response filed 19 December 2002. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is lack of antecedent basis for the recitation "the fluid mixing device defined in claim 1". Claim 1 has been amended so that it no longer recites a fluid mixing device.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 8, 11, 14, 16, 18-20, 22-26, 30, 32-37 and 41-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Kao (US 4,258,782). Initially, it is noted regarding claim 1, that the only positively recited structural element is a "mixing

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element". The "surface" mentioned in the claim is not a surface of the mixing element, but instead is a surface of an unclaimed element which is intended to be downstream of the mixing element in an intended operation. While the claim discusses the intention that the claimed device be used in conjunction with "a fluid having a direction of flow"; "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art" *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also, [e]xpressions relating the apparatus to contents thereof during an intended operation are of no significance in determining the patentability of the apparatus claim" *Ex parte Thilbault*, 164 USPQ 666,667 (Bd. App. 1969) and "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims" *In re Otto* 136 USPQ 458, 459 (CCPA 1963). Furthermore, "the manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself" *In re Casey* 152 USPQ 235 (CCPA 1967). Regarding the preamble phrase "fluid radiation treatment system", Kao ('782) is considered to disclose a radiation treatment system because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchange involves radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4). Regarding claim 1, Kao ('782) discloses a system comprising at least one mixing element (16). Claim 1 fails to positively recite any further structural limitation, but discusses how the claimed device is intended to be used. The device of Kao ('782) would be capable of being used in the manner discussed in claim. Kao ('782) indicates an intended direction

of fluid flow with "arrows 12". The mixing element would be capable of creating a vortex adjacent a surface downstream thereof (such as a surface of "inner cylinder 13"). As explained in col. 1, line 45 to col. 2 line 2, the generally planar fins (16) are angled downstream and have a edge along a helical path with respect to cylinder (13). From this information, and as seen in Fig. 1, a first normal at a centroid of the mixing element (16) intersects a normal to the surface of cylinder (13) at the centroid, and the first and second normal and the direction of fluid flow are in non-planar relationship. Claims 2-4, 8 and 11 fail to further structurally limit the claimed apparatus because these claims only discuss a surface which is not part of the claimed apparatus. Regarding claims 14 and 41, the mixing element comprises a planar surface (see Fig. 4; col. 2, lines 18-20). Regarding claim 16, the mixing element has an apex portion (see Fig. 4). Regarding claim 18, while it is considered that the intended direction of flow is a matter of intended use, not structure, the apex portion of Kao ('782) is oriented downstream (see col. 1, lines 66-67; Figs. 1 and 4). Regarding claim 19, the device includes first and second mixing element (16) (see Fig. 1). Regarding claim 20 the first and second elements are mirror images of each other about a plane (the plane being normal to the helical path of the edges of the elements 16, at a point between the two elements). Regarding claim 22, the first mixing element comprises a first leading edge (at 15) and a first trailing edge (25 and/or 27) (see Figs. 1 and 4). Regarding claim 23, the second mixing element comprises a second leading edge and a second trailing edge (see Figs. 1 and 4). Regarding claim 24, the first mixing element comprises a first leading edge and a first trailing edge and the second mixing element comprises a second leading edge and

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a second trailing edge (see Fig. 1 and 4). Regarding claim 25, at least one of the first leading edge and the second leading edge comprise a substantially straight edge (see Figs. 1 and 4). Regarding claim 26, both the first leading edge and the second leading edge comprise a substantially straight edge (see Figs. 1 and 4). Regarding claim 30, the first trailing edge and the second trailing edge are in spaced relation to define an opening (see Fig. 1). Regarding claim 32, the first mixing element comprises a first apex portion (see Figs. 1 and 4). Regarding claim 33, the second mixing element comprises a second apex portion (see Figs. 1 and 4). Regarding claim 34, the first mixing element comprises a first apex portion and the second mixing element comprises a second apex portion (see Figs. 1 and 4). Regarding claim 35, the first apex portion is oriented downstream (see col. 1, lines 66-67; Figs. 1 and 4). Regarding claim 36, the second apex portion is oriented downstream (see col. 1, lines 66-67; Figs. 1 and 4). Regarding claim 37, the first apex portion and the second apex portion are oriented downstream (see col. 1, lines 66-67; Figs. 1 and 4). Regarding claim 42, the mixing element comprises a wedge (see Figs. 4 and 5). Regarding claim 43, Kao ('782) discloses a system comprising at least one mixing element (16) for mixing a flow of fluid having a direction of fluid flow (12), the at least one mixing element (16) comprising a surface having a first normal which is angled acutely with respect to a first plane having a second normal substantially perpendicular to the direction of fluid flow; and acutely angled with respect to a second plane parallel to the direction of fluid flow and orthogonal to the first plane (see col. 1 line 45 to col. 2 line 2; Figs. 1 and 4). Regarding the preamble phrase "fluid radiation treatment system", Kao ('782) is considered to

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disclose a radiation treatment system because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchange involves radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4). Regarding claim 44, Kao ('782) discloses a system comprising at least one mixing element (16) for mixing a flow of fluid having a direction of fluid flow (12), the at least one mixing element (16) comprising a surface having a normal which is acutely angled with respect to each of two planes which are orthogonal to one another, each plane intersecting on a line substantially parallel to the direction of fluid flow (see col. 1 line 45 to col. 2 line 2; Figs. 1 and 4). Regarding the preamble phrase "fluid radiation treatment system", Kao ('782) is considered to disclose a radiation treatment system because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchange involves radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4). Regarding claim 45, Kao ('782) discloses a system comprising at least one mixing element (16) for mixing a flow of fluid having a direction of fluid flow (12), the at least one mixing element (16) comprising a surface having a normal which is acutely angled with respect to a first plane and a second plane which is orthogonal to the first plane, the first plane and the second plane intersecting on a line substantially parallel to the direction of fluid flow (see col. 1 line 45 to col. 2 line 2; Figs. 1 and 4). Regarding the preamble phrase "fluid radiation treatment system", Kao ('782) is considered to disclose a radiation treatment system because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchange involves

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radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4). Regarding claim 46, it first must be noted that the "surface" discussed in the claim is not a surface of any positively recited element of the claim. That having been said, Kao ('782) discloses a system having a direction of fluid flow (12), the device comprising at least one mixing element (16). The mixing element would be capable of creating a vortex adjacent a surface downstream thereof (such as a surface of "inner cylinder 13"). The mixing element (16) is oriented in a manner such that a single rotation around its nearest edge (at 15) to the surface of 13 causes the mixing element to become parallel to a tangent to the surface of 13 nearest to the mixing element, describing an axis of rotation that is oblique with respect to the direction of fluid flow (see col. 1 line 45 to col. 2 line 2; Figs. 1 and 4). Regarding the preamble phrase "fluid radiation treatment system", Kao ('782) is considered to disclose a radiation treatment system because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchange involves radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4). Regarding claim 47, Kao ('782) discloses a radiation source module (10) comprising the fluid mixing device discussed above with regard to claim 1. Kao ('782) is considered to disclose a radiation source module because of the disclosure of "heat exchange device 10" (col. 1, line 39). It is considered that heat exchanger involves radiation of heat through electromagnetic radiation (see "Physics for Scientist and Engineers" pages 522 and 523, section 17-4).

Response to Arguments

6. Applicant's argues "the person of ordinary skill in the fluid radiation treatment arts would not look to the heat exchange art" (emphasis omitted). However, as held in *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986), "Arguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102".

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 571-272-1148. The examiner can normally be reached on 9:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Sorkin



CHARLES E. COOLEY
PRIMARY EXAMINER